

# PATENT ABSTRACTS OF JAPAN

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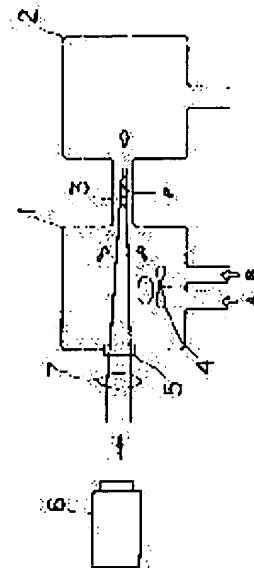
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## (54) METHOD AND APPARATUS FOR PREPARING FINE PARTICLE

### (57)Abstract:

PURPOSE: To easily and efficiently form fine particles with a desired particle size, by generating the heat exciting reaction of a stock material not reacting at ambient temp. by dielectric breakdown plasma generated by condensing laser beam.

CONSTITUTION: CO<sub>2</sub>-TEA laser beam from a laser oscillator 6 is one with about 0.5W1J/pulse class, a pulse lasting time of about 1 μs and peak output of about 1MW and condensed by a lens 7 to generate ionization action due to an ultra- high electromagnetic field in the vicinity of the focus of said lens and laser induced dielectric breakdown plasma is generated in a tubular passage 3. If stock gases A, B, for example, SuCl<sub>4</sub> gas and O<sub>2</sub> gas mixed in a stock material container 1 are guided to the side of a product container 2 through the passage 3, the gaseous mixture generates heat exciting reaction by rapid heating due to LIDB plasma P in the tubular passage 3 to form fine particles which are, in turn, transferred to the container 2 while the shapes thereof are held by quenching due to heat extinction.



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